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EDITOR'S NOTE

Barbara E. Luedtke

The moral of this issue of the *Bulletin* is that archaeological information is never too old or too new to publish. An excuse I frequently hear when I urge people to submit articles to the *Bulletin* is, "I want to wait until all the analyses are done before I write." However, there will always be one more analysis to do, and sites such as the Berkshire County mastodon find could continue to produce information for years. Meanwhile, Parrish, Marino and Bulkley have provided a valuable progress report that informs the archaeological community of what is known so far and lets us use that information in our thinking about post-Pleistocene Massachusetts.

The Blaine Site was also excavated very recently, and this report by Jane McGahan is a fine example of how much can be accomplished when someone gets right to work on writing up a project. Nearly everyone enjoys excavation, but the mark of a truly dedicated archaeologist is willingness to tackle the hard labor of preparing the report!

Another excuse I sometimes hear for not writing is, "But I dug (or found) that years ago. Who would be interested now?" It is true that theory, methods, and interpretations in archaeology change considerably over the years, but the basic facts of site location, soils, artifacts and features never go out of date. The Back Porch Site had been known and collected for decades, but it was little more than a spot on a map until Arthur Staples took the time to write down what he knows about the site. Such documentation is especially important for a site that is substantially destroyed, because additional field-work cannot be done to fill the gaps in our knowledge.

Sometimes archaeology's new methods and interpretations can be applied to old findings, as Carty has done here with the Satucket cache. The original find was made in the 1950's, but it takes on new significance in the light of recent studies of Susquehanna lithic technology.

Finally, Jorgensen and Lawn deal with the oldest data of all, historic records from the 16th and 17th centuries. These sources have been known for generations, but they can still yield new insights when examined from a slightly different perspective.

The only time it is really "too late" to publish archaeological data is when field notes and artifacts have been lost or scattered, memories have dimmed, and excavators have lost interest or died. When this happens, a site or find has been destroyed as effectively as if it had been bulldozed, no matter how carefully it was originally excavated and documented.

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THE DEVELOPMENT OF THE NARRAGANSETT CONFEDERACY: AN ECONOMIC PERSPECTIVE

Harvey C. Jorgensen and Alexander G. Lawn

The purpose of this study is to examine the nature of southern New England Indian economic, political and social institutions during the Contact Period. To illustrate the way southern New England Indian culture changed in the face of European contact, we have concentrated on a representative group, the Narragansett.

We will refer to the major subdivisions of the southern New England Indians at the time of the first English settlements as confederacies. These were known to early observers as: Massachusetts, Narragansett, Pequot and Wampanoag or Pokanoket. These groups of natives held recognized territories in which there was some centralization of authority.

The Narrangansett confederacy, at its height, occupied most of the area of the present state of Rhode Island, roughly 2,000 square kilometers. The most striking feature of this area is that it encompasses several hundred kilometers of coastline, a large part of which is Narragansett Bay. This extensive coastline afforded many excellent anchorages for European ships, especially in the deep and sheltered waters of the Bay (Figure 1).

The model we have devised to help understand cultural change among the Narrangansett during the Contact Period is an economic one in which European trade plays the most impor-

tant part. We suggest that European trade was the major stimulus for the development of the Narragansett and other coastal Algonkian confederacies. Aboriginal population decline due to diseases introduced by Europeans was also an important factor (Brasser 1971).

We have primarily utilized ethnohistorical data but this approach should be useful in interpreting archaeological evidence. We do not presume to be experts in the archaeology of the Contact Period. The archaeological implications which can be inferred from our economic model we will leave to those better versed in this area than we. Our aim in writing this paper is to provide the professional, student and amateur with a better understanding of how the Narragansett lived and of the forces which affected their way of life. We also hope to give insight into the change which occurred upon the juxtaposition of two radically different cultures. Some of the statements we make are unsubstantiated. We intend them to be taken as parts of a hypothesis to be tested. The economic model which we are putting forth is consistent with, and can satisfactorily account for, much of what has been observed about this coastal Algonkian people, the Narragansett.

Among the aboriginal populations of southern New England, many cultural changes occurred during the sixteenth and seventeenth centuries and might well have begun earlier. The rate of change roughly paralleled the rate of European contact and trade. Many native institutions seen and described by the first English settlers were already radically different from those that existed several hundred years before.

The picture we have of the pre-Contact inhabitants of southern New England, including the Narragansett, is drawn from archaeological evidence and by extrapolation from sources such as Daniel Gookin, Thomas Morton, Roger Williams and William Wood. The Narragansett subsisted mainly on the growing of corn, beans and squash. The earliest authors to describe the western shore of Narragansett Bay expressed amazement at the vast areas of cleared land (Verrazano 1904:434; Williams 1874:407). Next in importance was the utilization of the plentiful fish and shellfish resources of this littoral environment. The hunting and trapping of game and the gathering of wild plants were also practiced. These semi-sedentary horticulturalists made use of varied food resources, resulting in a transhumant subsistence pattern.

Articles of material culture were produced by an extensive array of aboriginal crafts. Trade in these items, coupled with the agricultural base, made a limited amount of specialization of labor possible. The trade of regional resources rounded out the pattern of modest, pre-Contact trade.

The pre-Contact way of life would soon be altered by a new stimulus, European trade. Exactly when it began is uncertain. The fish resources off the New England coast were well known to Europeans at an early date (Andrews 1934:17-23). It is reasonable to assume that many more voyages were made than those for which records are extant, due to the economically competitive nature of these journeys.

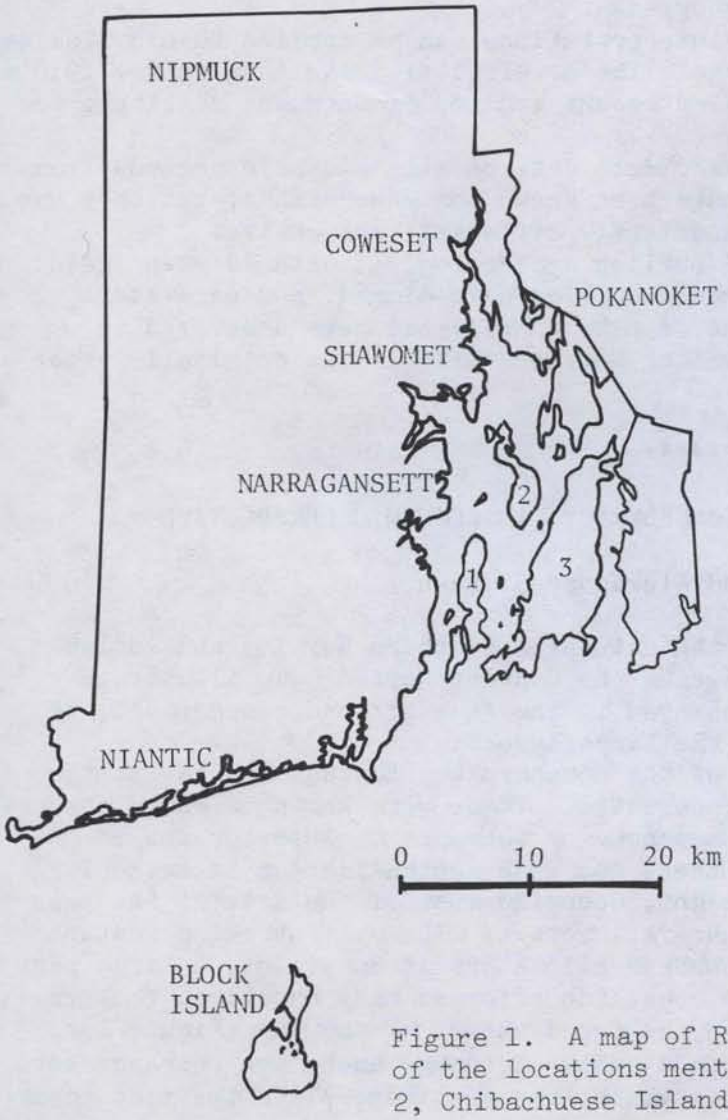

Figure 1. A map of Rhode Island showing some of the locations mentioned. 1, Conanicut Island; 2, Chibachuese Island; 3, Aquidneck Island.

In 1524 Giovanni de Verrazano entered Narragansett Bay and came into contact with some of the native inhabitants. Verrazano left an interesting account, which contains several passages suggesting that he and his crew were not the first whites to have visited the area. The account states that "...we saw many plates of wrought copper, which they esteem more than golde." (Verrazano 1904:433.) The "plates of wrought copper" were undoubtedly sheet copper, which was a common item on European ships of that period (Morton 1975:207-209).

Trade between Indian and European during the early sixteenth century was sporadic but gradually increased. Fishing vessels soon began to carry items expressly for trade when it became apparent that the Indians could supply food and valuable furs. Archaeological data from various sites imply such a change in the frequency of trade and in the kinds of items which Europeans brought for trade (Salwen 1966; Simmons 1970).

Another European to leave us a record of contact with the Indians of southern New England was John Brereton, who with Bartholomew Gosnold in 1602, explored the area around Cape Cod, Martha's Vineyard, and the Elizabeth Islands. Brereton noticed that the Indians possessed numerous articles of European origin such as plates, cups, necklaces and arrowheads fashioned from sheet copper, a copper kettle, and an iron grapple. Six Indians, one of whom was dressed in European clothes, rowed out to meet Gosnold in a Basque shallop when he made his first landfall north of Cape Cod. While camped on Cuttyhunk, one of the Elizabeth Islands, Gosnold's party was visited by the local inhabitants, who possessed sheet copper in the form of necklaces, cups, plates, collars, earrings and arrowheads (Brereton 1903:4-11). These observations show that the native populations were already well accustomed to Europeans and their goods by the end of the sixteenth century.

During the late sixteenth century, hundreds of ships per year sailed into New England's coastal waters for fishing, trading and exploring (White 1947:13). Narragansett Bay was well known to Dutch, English and French traders.

The superiority of European manufactured articles, coupled with the relative ease of obtaining furs, caused the Narragansett to turn away from many of their painstaking, aboriginal crafts. Iron hoes, knives, hatchets and fishhooks were more efficient and durable than their shell, stone and bone counterparts. The use of furs as clothing waned as the advantages of trade cloth were realized and the fur bearing animals became depleted. Roger Williams, who ran a trading house on the shore of Narragansett Bay, remarked on this. "They all generally prize a Mantle of Eng-(sic) or Dutch Cloth before their own wearing of Skins and Furs because they are warm enough and Lighter." (Williams 1827:134.) The use of European goods did not decrease the Narragansett workload, however. European trade actually increased the workload by raising the level of production. These much sought-after articles were highly valued utilitarian items and were regarded as status objects.

The Narragansett's desire for European trade led them to make their first gift of land. In 1634 they gave an English trader, John Oldham, the island of Chibachuese, today known as Prudence Island, in the hope of securing a close and permanent trading outlet (Williams 1874:70). The vital importance of the trade is demonstrated by the fact that this same Oldham was later murdered by tributary Narragansett sachems, presumably for trading with their rivals, the Pequot (Winthrop 1853:227).

The Indian penchant for European goods caused immediate economic changes, and more gradual social and political ones in Narragansett society. It resulted in the development of the Narragansett confederacy, a political and economic organization of villages which grew as trading became more formalized and widespread. The original Narragansett villages, from which the confederacy grew, were located along the western side of Narragansett Bay in present North Kingstown.

The first decades of the seventeenth century were a time when trade in furs was carried on extensively along Narragansett Bay. The shift from subsistence to commercial hunting had already depleted the beaver population of this area, as well as of the rest of coastal southern New England. It followed that the furs would have to come from further inland. A trading relationship, beneficial to both coastal and inland villages, was set up in this way: the coastal Indians, such as the Narragansett, could act as middlemen between European traders and inland villages, providing the inlanders with European goods, and reaping a profit for themselves. Narragansett Bay was an area that European traders would frequent because of the large, aboriginal population and the excellent anchorages for European ships.

Becoming a trading center had important implications for the villages in this area. The people of these coastal villages realized at once the advantage of the broker role whereby inland groups, or those less powerful, had to deal through them. In this way they greatly increased the amount of trade goods they could obtain. William Wood, writing of the Narragansett, said:

> "Since the English came they have employed most of their time in catching of beavers, otters, and musquashes, which they bring down into the bay, returning back loaded with English commodoties, of which they make a double profit by selling them to more remote Indians who are ignorant of what cheap rates they obtain them in comparison of what they make them pay, so making their neighbors ignorance their enrichment." (Wood 1977:81.)

This trade was the basis of the Narragansett confederacy. Several factors, such as intermarriage and reciprocal defense, served to strengthen the bonds between the coastal Narragansett villages and other confederacy members. Groups who became members to a greater or lesser degree included the Niantic, Coweset, Shawomet, certain Nipmucks, and the Aquidneck, Conanicut and Block Islanders. At its height the Narragansett confederacy counted as members villages as far away as Massachusetts Bay and the Connecticut River. That Narragansett influence extended this far can be seen by the following examples: Sequasson, a Connecticut Valley sachem, was aided by Miantonomo, a grand sachem of the Narragansett, when Sequasson was harrassed by Uncas (Williams 1874:120). Cutchamakin, a Massachusett sachem, yielded hunting rights, tribute and military support to the Narragansett sachems (Winthrop 1853, vol.2:177).

That the Narragansett confederacy was a political and economic, rather than a cultural entity, can be seen by the fact that it crossed linguistic lines. Although little is specifically known about the linguistic patterns in the area, it is reasonably certain that the Nipmuck, certain groups of whom were confederacy members, spoke a different dialect from the Narragansett proper and the Niantic. Although the Wampanoag and Narragansett confederacies were often at odds, their dialects appear to have been closer to each other than to Nipmuck (Goddard 1978:72; Swanton 1976:22,27). Whom one traded with was more important than the dialect one spoke.

At the onset of the trade, European articles were a luxury. After several generations they became a necessity because aboriginal crafts had fallen into disuse. One craft, however, the making of shell beads, or wampum, took on a new and increased importance. The use of these tubular shell beads as a medium of exchange had special significance for the Narragansett, "..,these southern mintmasters..." (Wood 1977:81).

By turning to large-scale manufacture of wampum, the Narragansett strengthened their position as middlemen in the fur trade. They controlled much of the shoreline from which the shells used to make the beads were taken. These areas included Block Island, southern Rhode Island, parts of Long Island and Connecticut. A tremendous amount of labor was required to convert these shells to the finished product. The channeling of people's energy into the production of large amounts of wampum was possible only as a result of the role of the sachem. He or she exhorted the people to produce wampum in order to acquire more trade goods.

Before European trade, the sachem had far less authority. As the trade increased, he became more important in a system of redistributing goods. A sachem held power only through persuasion and was constantly giving gifts in order to keep people willing to do as he suggested. Roger Williams related that Miantonomo, sachem of the Narragansett, was "...busy ten or twelve days together...in a strange kind of solemnity wherein the Sachems eat nothing but at night, and all the natives round about the country were feasted" (Williams 1874:56). The tribute due the sachem served the purpose of increasing the level of production and with it, the amount of trade goods that could be obtained.

Another aspect of the sachem's role was his skill as a military leader. Post-Contact trade led to strife between confederacies. Hunting territories and shell sources became more valuable than ever and were well worth fighting for. A sachem had to provide protection for his partners or they would soon be someone else's partners. The method of inducing men to fight was also an integral part of the redistributive process. Canonicus, a Narragansett sachem, told Roger Williams that "...he and Miantunnomu had paid many hundred fathom of wampum to their soldiers" (Williams 1874:58).

The alliances which formed the Narragansett confederacy were formalized by intermarriage. Miantonomo, on a certain occasion, was pressured by the Massachusetts Bay government to harrass the Niantic but would not, pleading that they were his blood relations (Williams 1874:138). The fighting that developed between the Mohegan and the Narragansett after the Pequot War was partly due to Uncas' depredations on certain Nipmuck and Connecticut River Indians claimed as kinsmen and tributaries by Miantonomo (Williams 1874:120).

The Pequot War reinforced the role of the sachem among the Narragansett. From the Indians' standpoint, the sachem was a means of communication with and protection from their powerful and unpredictable English neighbors. The English colonists' version of warfare was seen by the Narragansett as unprecedented, large-scale slaughter (Jennings 1975:150).

The colonial governments had their own reasons for recognizing and dealing with the confederacy sachems. A sachem declaring himself and his territory subject to a colonial government strengthened the colony's holdings. The legality of the early settlements in Rhode Island was based on purchases from the Narragansett sachems. A recognized sachem facilitated the purchasing of Indian land by the English. Attempting to buy land from individual Indians would certainly have proved difficult or impossible. The existence of a "king" who could "sell" land simplified the process immeasurably.

Conflicts between rival confederacies were used by the different colonies to further their own territorial claims. A good example of this was the rivalry between Connecticut and Massachusetts for the Pequot territory after the destruction of that confederacy. Connecticut's Mohegan clients were victorious over the Massachusetts-backed Narragansett, resulting in Connecticut acquiring jurisdiction over the disputed area (Jennings 1975:125, 258).

Once permanent English settlements were well established, a myriad of forces began to break apart the fragile Narragansett confederacy, as well as others. There are several examples of local sachems' taking advantage of the English presence to break away from their respective confederacies. Ninigret and Pumham were Narragansett confederacy members who later asserted their independence. The changing relationship of the Mohegan under Uncas to the Pequot during the early 1600's is more easily understood when looked at in the light of our model. The Mohegan were located further inland than the coastal Pequot. The Mohegan claimed their independence from the Pequot only after English outposts had been established along the Connecticut River, which occurred during the middle of the 1630's. The middleman advantage formerly enjoyed by coastal groups deteriorated. Many aspects of land sales provoked quarrels among confederacy members. Colonial governments often usurped the sachems' power (Jennings 1975:265). Finally, the decline of the fur trade made the aboriginal population a troublesome obstacle in the eyes of the settlers.

The change brought about by European contact cannot be overestimated. One of the effects of this contact was the development of the Narragansett confederacy. Its major effect was to follow: the widespread destruction of southern New England Indian culture. The Narragansett fared better than some. Today, the survivors of the confederacy, both Narragansett and Niantic, maintain part of the culture which the white man and his diseases could not destroy. These native Americans are recognized as the Narragansett Tribe. They live in and hold tribal functions on a small part of the land which they formerly occupied.

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REPORT OF A CACHE OF POINTS RELATING TO THE SUSQUEHANNA TRADITION

Frederick M. Carty

INTRODUCTION

As is so often the case, the subject of this report was discovered quite by accident by Mr. Stanley Buzarewicz of Whitman, Massachusetts, in the early 1950's. His cooperation in making this material available for study, and for relating the following circumstances surrounding the discovery, are gratefully acknowledged.

The site on which the cache was found is located on the Satucket River, which is a tributary on the upper reaches of the Taunton River drainage basin in the town of East Bridgewater, Massachusetts. This site can be located on the USGS Whitman quadrangle, on the south bank of the Satucket River and directly west/southwest of the point of intersection of the river and Washington Street. The site was apparently located at an elevation of 50 to 60 feet (15 - 18 m) above sea level on a glacially derived kame deposit described as follows:

> "...cobble and boulder gravel chief material exposed; probably topset beds of a delta overlying fine to medium sand." (Petersen and Shaw, 1967)

The area was wooded with white pine at the start of commercial sand and gravel removal operations, and may have never been plowed due to the poor farming characteristics of kame deposits. The site was discovered by Mr. Buzarewicz at the start of the sand and gravel removal, in the early 1950's. The entire kame deposit was worked out by the mid 1960's,

completely destroying the site, and the area has been abandoned since then.

During this period Mr. Buzarewicz visited the site several times and collected artifacts from exposed surfaces and topsoil piles. He reports that prehistoric occupational evidence was widely scattered over the entire kame deposit and for at least 1000 feet along the river. Over the years he was able to gather a modest collection, which now serves to indicate the former presence of several Archaic and Woodland components at this general location.

The cache was discovered after his first few initial visits to the site. As is standard practice in most sandpit operations, bulldozers were employed to uproot stumps and strip topsoil in order to expose the subsoil and glacial deposits, which were then mined. A large area had been stripped to the yellow subsoil level and had been exposed to several drenching rains when Mr. Buzarewicz returned to the site and discovered the cache.

Along the edge of a small gully created by rainwater running off the exposed area, he noticed two projectile points eroding from the gully side, close together. Removing these and probing the exact spot with a stick, he recovered eleven more points of similar form in very close association, most touching each other as if once contained in a package or pouch. This deposit would have been approximately twelve to sixteen inches (30-40 cm) below the original ground surface, within the yellow sand and gravel subsoil.

The provenience from a yellow subsoil level could be confirmed by observing minute quantities of that same material still adhering to some of the points, in fissures and cavities. In addition, most of the points exhibit fine, wavy, 'rootlet stains' on the blade surfaces, which also helps to confirm a subsoil provenience.

Mr. Buzarewicz remembers no pit outlines, charcoal, or red ochre associated with the deposit. The points show no evidence of burning. The recovered thirteen specimens (it is possible that there may have originally been more) have been well curated and in the possession of Mr. Buzarewicz since the date of discovery. They are illustrated in Figure 2.

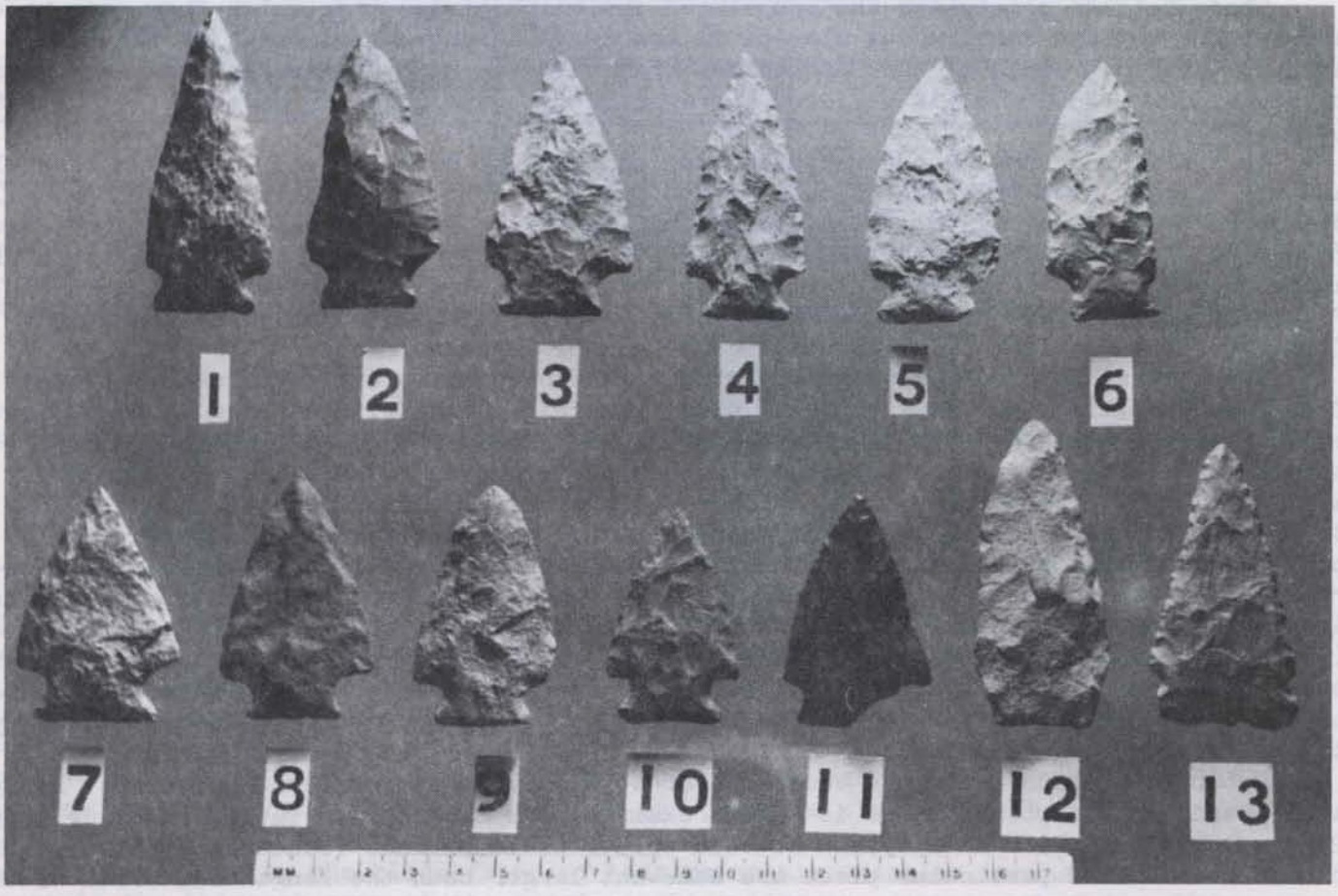

Figure 2. The Satucket Cache. *1-11*, Wayland Notched points, Dudley variety; *12*, Mansion Inn implement blade, Dudley variety; *13*, Meadowood point.

A major part of the importance of the Satucket cache is the discrete nature of its occurence. The discoverer has stated that he was quite amazed by the compactness of the deposit, maintaining that all the artifacts occupied a space not much larger than a fist. Nothing else was found in the immediate vicinity. This condition has significance for certain matters to be discussed further on.

CULTURAL RELATIONSHIPS

In terms of point typology, the illustrated specimens correspond closely to the Wayland Notched type, as recognized and defined from the important Mansion Inn site in Wayland, Massachusetts (Dincauze 1968:23). The average dimensions for the Satucket cache specimens are closest to the Dudley variety of Wayland Notched point dimensions, as known from Mansion Inn (Dincauze 1968:25). The former series, however, averages out at the upper end of the range of standard deviation for the latter series in all of the three dimensions considered. (See TABLES 1 and 2.)

The flaking pattern is identical with that described for the type series (Dincauze 1968:16). Four of the points display complete alternate beveling of the blade edges from tip to shoulder (Figure 2, Nos. 4,8,10,11). All of the points have ground basal and notch edges. In addition, all of the points exhibit wear on the facial crests of the flaking scars, but not on the blade edges. It is possible that this type of wear on the high flaking crests is the result of use, perhaps as knives. However, the absence of similar wear on the cutting edges argues against this, unless those edges had been freshly resharpened, resulting in the blade beveling and asymmetry. It is also possible that wear of this nature is 'transport wear', the result of the specimens being carried around in a tied skin bundle with the blade faces rubbing flat against each other. The observed wear on the high spots of the flaking crests could thus have been produced without affecting the blade edges or tips.

These notched points and the associated implement blades from which they were made are a recurrent and conspicuous element in the known ceremonial features of the Late Archaic Watertown phase of the Susquehanna tradition in southern New England. A time range of circa 3600 - 3300 B.P. is believed appropriate for this phase in eastern Massachusetts (Dincauze 1974:49).

In addition to the Watertown phase type stations at Mansion Inn, Watertown Arsenal and the Vincent Site (Dincauze 1968:72), and the other regional related sites thoroughly discussed by Dincauze (1968:78), a similar manifestation has been reported for the Seaver Farm Site on the Taunton River (Taylor 1972:1). Some of the illustrated points from the above location bear a remarkable similarity to the Satucket cache specimens (Taylor 1972: Figure 2, Nos. 1,2,4). The Seaver Farm locus is only seven or eight miles downstream from the site location of the Satucket cache on the Satucket River.

The Wayland Notched points from the aforementioned sites have all been recovered from a ceremonial or mortuary context, usually within large pit features. The Buzarewicz cache appears to differ from this pattern. It may simply represent tools cached at a secular habitation camp, and subsequently lost or forgotten. There is only one other artifact in Mr. Buzarewicz's small surface collection from this location which relates to any of the phases of the Susquehanna tradition. This artifact is a damaged basal portion of a Mansion Inn blade, probably the Watertown variety (not illustrated). The remainder of the surface collection consists of some Middle Archaic material, mainly Late Archaic quartz small triangular and stemmed points, a gouge, and a little Woodland material (not illustrated). The recovered evidence thus suggests that this location was frequented over thousands of years by several different prehistoric groups. The evidence is biased however, because of the nature of the collecting activity and the destruction caused by the gravel removal operations.

Two of the blades from the cache are of obviously different form, and cannot be typed as Wayland Notched points. One is a good example of a Mansion Inn implement blade (Figure 2, No. 12), from which the Wayland Notched points could be made (Dincauze 1968:21). The dimensions of this particular piece are somewhat larger than the length and basal width averages for the Dudley variety of Mansion Inn blades, but it is closer to the Dudley variety than the Watertown variety (Dincauze 1968:21).

TABLE 1

Metrical Data (in cm.) for the Satucket Cache Specimens

SPECIMEN NUMBER From Figure 1	LENGTH	MAXIMUM BLADE WIDTH	BASAL WIDTH	BASAL GRINDING	BLADE EDGE BEVELING	THICKNESS	W-T RATIO
1	7.4	2.9	2.3	X		0.7	4.14
2	6.7	3.3	2.3	X		0.8	4.13
3	6.2	3.5	2.4	X		0.8	4.38
4	6.5	2.8	2.1	X	X	0.6	4.66
5	6.4	3.1	2.3	X		0.8	3.88
6	6.2	2.6	2.1	X		0.8	3.25
7	5.4	3.8	2.7	X		0.6	6.33
8	5.7	3.5	2.1	X	X	0.6	5.83
9	5.6	3.3	2.2	X		0.6	5.50
10	4.9	3.0	2.4	X	X	0.6	5.00
11	5.4	3.5	2.3*	X	X	0.6	5.83
12	7.0	3.2	2.2			0.7	4.58
13	6.5	3.3	3.4			0.6	5.66
AVERAGES (From 1-11 only)	6.03	3.20	2.29			0.68	4.81

*Estimated.

The remaining point (Figure 2, No. 13) is clearly different from the others, which are characteristic elements of the Watertown phase tool kit as demonstrated at other sites. This point is most like a rather large example of a Meadowood type point, as described from New York state (Ritchie 1971:35). The flaking technique is noticeably different from the process apparently employed to produce the Wayland Notched points. The cross section is very flat and fairly thin for a relatively large point, and the pressure flaked blade edges are markedly sinuous. The small notches are pressure flaked from both blade faces, and the notches and basal area are not ground. Like the accompanying Wayland Notched points, the high spots on the blade faces of this point also display 'transport wear'. The basal area is the thinnest part of the point, looking like the distal end of the flake on which it was made.

TABLE 2

Comparison of Selected Metrical Data (in cm.) for Wayland Notched Points (Dudley Variety) from the Mansion Inn Site and the Satucket Cache.

	MANSION INN	SATUCKET CACHE
SAMPLE SIZE	25+	11
AVERAGE LENGTH	5.4	6.0
AVERAGE BLADE WIDTH	2.8	3.2
AVERAGE BASAL WIDTH	2.0	2.3
AVERAGE THICKNESS	0.7	0.68
AVERAGE W-T RATIO	4.0:1	4.7:1

Meadowood points are known from the Mansion Inn Site, where, however, a clear association with either the Watertown or Coburn phase materials was not discernible (Dincauze 1968:27,88). The unequivocal association here with the Satucket cache materials is therefore important, and may suggest that contact between the interior-derived (Great Lakes area) Meadowood complex and certain of the coastal eastern Massachusetts Terminal Archaic-Early Woodland complexes was initiated earlier than is currently suspected.

In support of the above statement, recent investigations at a site on the upper Susquehanna River in New York have produced a radiocarbon date of circa 3230 B.P. for a feature containing Meadowood points and implement blades. At the same location, a component characterized by Susquehanna Broad points and by points very similar to Wayland Notched forms was radiocarbon dated to circa 3330 B.P. (Funk and Rippeteau 1977:Plate 8.)

As is apparently the case over wide areas of the Northeast, the majority of Meadowood points seen in eastern Massachusetts collections are made of the characteristic mottled brown and gray Western Onondaga chert from the northwestern part of New York State and environs. A recent study has suggested that these were traded as finished but unnotched blades from the Meadowood hearth area throughout the Northeast (Granger 1978:116-119).

The Satucket cache Meadowood point is unusual in that it is made of what is probably a local lithic material, which will be described in more detail further on. Perhaps the style was copied by an eastern Massachusetts knapper who had come in contact with Meadowood people or artifacts.

RAW MATERIALS

In contrast with the near-uniformity of style is the diversity of raw materials from which the cache points are made. While some appear to be varieties of a single kind of lithic material, each is different in color and texture. Some of the raw materials are clearly exotic to eastern Massachusetts.

While not claiming to be a trained geologist, as an archaeologist and flintknapper I have had a long-time interest in lithic materials and a degree of experience with eastern Massachusetts stones in particular and rock types of the Northeast in general. In order to clarify my position here, I would like to explain that I have managed to gain a familiarity with the regional lithic materials through the following process:

1. Reading and studying the available geological literature and United States Geological Survey bedrock and surficial maps for the area.
2. Visiting many outcrop locations, sand and gravel pits and deposits, and the coastal beaches, and collecting numerous samples.
3. Experimentation with knapping the various lithic materials.

4. Studying the artifacts and kinds of raw materials present in prehistoric collections from the area.

Through this process one becomes familiar with the color and texture variation within and between outcrops, and between fresh and patinated surfaces. Examination of glacial cobble deposits and of beaches provides valuable information on distribution, frequency of occurrence, and quality of the raw materials available from those sources.

The problem of patination of the regional volcanics, and other lithic materials, has long frustrated attempts at identification. With the relatively recent revival of interest in lithic studies and analysis, and new discoveries (many not yet published in the literature) of major quarry sites, and through familiarization with lithic materials using the steps outlined above, this patination should no longer be a stumbling block. It is my opinion that there is no substitute for the actual handling of the materials in the field, and the familiarity is gained most effectively by simply going out and doing it.

The lithic identifications of the cache materials soon to be presented are, in a strict sense, unproven, and admittedly based on macroscopic, readily observable visual and physical characteristics only. Even so, they may prove useful if only to motivate further research and discourse in this area of study. I would like to quote here the following comments which reiterate some of my own views and are relevant to discussions of lithic materials and lithic source analysis:

> "A problem with generalized use of lithic sources is the problem of accurate quarry identification familiar to all archaeologists. With some degree of familiarity in an area, however, this problem is not insurmountable. Given variation within a quarry, variation within a geological formation, amd similar lithics in similar formations...many quarries still produce quite distinctive materials, materials of superior quality that were widely used and that remain recognizable some distance from the source.
>
> "Although detailed petrographic analysis and other analysis are preferable, in the past these have tended to confirm sources which the archaeologist had already identified as most likely. The experienced eye and mind is a superior computer, taking into account dozens of attributes in a few glances, and while such an identification can be confirmed, it would be hard to improve upon it for speed and accuracy.
>
> "Furthermore, it is often possible to make such statements as 'the nearest possible source for this material is X km.', or 'these materials came from Y formation which is located X km. upslope on the mountain front,' etc." (Reher and Frison 1980:121-122.)

The archaeological and geological situation in the Northeast is further complicated by the effects of glaciation. In eastern Massachusetts the various glacial advances transported lithic materials from outcrop source areas and deposited them as boulders and cobbles at some distance from the original source, where they could have been picked up and used by prehistoric knappers.

The issue of raw material procurement practices is especially significant in the glaciated Northeast, and researchers have only recently begun to explore the import of this topic. The nature of raw material procurement practices, such as glacial cobble gathering and quarrying from outcrop sources, appears to vary in importance through time and between cultural complexes in eastern Massachusetts.

Glacial cobble utilization, particularly for quartz, was clearly the dominant procurement practice over the long time span of the small point tradition, and to a lesser degree with certain other complexes in specific areas. Most of the major outcrop source areas, intensively utilized in earlier and later periods, were largely ignored by the various small point complexes. A more complete understanding of this subject may prove to be especially relevant in helping to explain the nature and dynamics of the small point adaptations. Questions concerning the origin, development, distribution, duration, and relationship of the small point complexes to other apparently contemporary manifestations might be profitably explored from this perspective. At present, it is clear that most of the small point complexes in the Northeast are only imperfectly understood.

Raw material procurement from outcrop sources appears to have been characteristic of most prehistoric cultures in eastern Massachusetts other than the small point complexes. Some of the regional Early Archaic, Middle Archaic, Susquehanna tradition, and Middle Woodland complexes clearly sought and preferred certain lithic materials, which could not be derived from glacial cobble deposits in sufficient quantity or quality. The quality factor has been largely overlooked in this context. Intensive quarrying activity at specific outcrop locations characterizes the raw material procurement practices of those complexes. Within those periods, certain high quality materials were repeatedly used and have a distribution which is significant and not influenced by glacial deposition of outcrop material.

In this area, we need to accumulate more data on site-specific and complex-specific raw material procurement patterns. Debitage from sites could be saved and analyzed; the presence or absence of cortical flakes from systematically collected components would help to clarify the importance of glacial cobble procurement for any given site, complex, and drainage area. More detailed analyses of outcrop/workshop sites are needed to enlarge our understanding of the procurement practices and the complexes involved. Sophisticated scientific techniques, such as neutron activation analysis, could be employed to characterize and compare the lithic materials from outcrop quarry sites with the artifacts and debitage from distant habitation sites. Many of these things are currently being attempted in this area, and the potential for deriving very useful information from lithic material distributions is great.

Because the inferences to be drawn from the lithic material identifications have a significant bearing on the interpretation of the cache, I would like to briefly describe each specimen in Table 3. A macroscopic visual description and *tentative* lithic identification is presented. A comparative hand specimen collection in my possession from the actual lithic outcrop source areas mentioned has been used as an aid in the identification. I have personally visited and collected samples from all of the eastern Massachusetts localities cited here, as well as the Flint Mine Hill quarry site near Coxsackie, New York. Samples of the other probably out-of-state materials have been collected by other people, who have generously shared their observations, opinions, and material samples with me. In other words, I have not yet personally visited Mt. Kineo, Maine, or the Delaware River valley outcrop source areas, but have handled a range of materials from those localities.

TABLE 3

Satucket Cache Lithic Materials

SPECIMEN NUMBER	DESCRIPTION AND IDENTIFICATION
1	Black porphyritic felsite with white phenocrysts. Strongly resembles certain varieties of the Lynn Volcanics which outcrop along the northern rim of the Boston Basin.
2	Fine-grained, dark greenish-gray material with a waxy luster and spotty brown (iron?) weathering stains. Identical with some hand specimens of Normanskill chert from the Hudson Valley of New York.
3	Light greenish-gray porphyritic felsite with angular white and smaller glass phenocrysts. Strongly resembles hand specimens of Kineo felsite from Maine.
4	Aphanitic felsite, weathered to a light tan-gray color. Resembles certain varieties of the Mattapan Volcanics which outcrop in the Westwood-Dover, Massachusetts area.

5 Porphyritic and heavily weathered bluish-gray felsite with fine, wavy, green flow bands. Flow banding and green accessory minerals are common characteristics of certain of the Mattapan Volcanics which outcrop in the Westwood-Dover, Massachusetts area.

6 Light greenish-gray porphyritic felsite with inconspicuous white and glass phenocrysts. Strongly resembles hand specimens of Kineo felsite from Maine.

7 Lightly weathered bluish-gray porphyritic felsite with small white phenocrysts. Resembles hand specimens of certain of the Mattapan Volcanics which outcrop in the Westwood-Dover, Massachusetts area.

8 Very heavily weathered, sandy textured purple argillite. This material is visually identical to weathered hand specimens of the Lockatong argillite from the Delaware River Valley in New Jersey.

9 Brownish-gray aphanitic felsite with small white weathering splotches. Probably a variety of the regional volcanics, but possible sources are unknown to me at present.

10 Chocolate-brown waxy chert. Strongly resembles hand specimens of the Normanskill cherts from the Flint Mine Hill area in the Hudson River valley of New York.

11 Glossy black chert with greenish highlights. Identical with certain hand specimens of Normanskill chert from the Flint Mine Hill area near Coxsackie, New York, in the Hudson River Valley.

12 Black argillite heavily weathered to a tan-yellowish color. Resembles hand specimens of certain of the Lockatong argillites from the Delaware River valley in New Jersey and Pennsylvania.

13 Aphanitic pink felsite with flow band lines of darker pink and purple, lightly weathered. Probably a high quality piece of the Mattapan Volcanics from the outcrop-quarry in Mattapan, Massachusetts, on the north bank of the Neponset River. (Bowman, et al., no date.)

ARGILLITES

The two argillites represented in the Satucket cache are visually identical to argillites present in the Mansion Inn and Watertown Arsenal assemblages. My observations lead me to believe that the argillites present in these Watertown phase assemblages are not local materials. Argillite formations do occur in the eastern Massachusetts area, most notably the Cambridge argillites which outcrop along the southern rim of the Boston Basin, the Barrington, Rhode Island, argillites, near Narragansett Bay, and other smaller outcroppings that are at present poorly known. Purple argillite is present in the Cambridge series, but most of the Cambridge and Barrington materials that I have examined, as projectile points and tools in regional collections, tend toward shades of blue-gray, dark gray, green-gray, and green. In every case the material patinates to a lighter shade. The above materials were apparently widely used by certain complexes in eastern Massachusetts, especially by the makers of Middle Archaic Stark-like points and Late Archaic small stemmed points. Whether subjected to fire or not, the local argillites just don't weather in the smae manner as the argillites present in the Watertown phase assemblages. This is true even for the Middle Archaic Stark-like points, which have been exposed to the elements for millenia longer. The argillites present in the Watertown phase assemblages, even when not burned, are very deeply weathered to the point where flaking scars have been obliterated (Dincauze 1968:94). This is suggestive of a differing chemical composition

from the local argillites, including possibly a significant presence of calcium carbonate as is apparently true for the Lockatong argillites (Didier 1975:97). The highly acidic eastern Massachusetts soils, reacting to and neutralizing the calcium carbonate content, may have thus produced the observed heavy weathering.

As a means of further explanation, I would like to state that I am indebted to William F. Bowman for sharing some of his ideas concerning lithic materials. Specificallly, Bill had suspected the presence of the purple Lockatong argillite on various Woodland sites he had collected. In 1976, he sent point fragments of this material to Mary Ellen Didier, who stated that the material was visually identical to the argillites she had been studying, especially the red variety which outcrops north of Byram, New Jersey. (William Bowman, pers. comm.) This particular material is believed to be represented by specimen 8 of the Satucket cache (see Figure 2).

SUMMARY AND MODELS

Based on the tentative lithic identifications presented in Table 3, six of the cache specimens appear to be made of regional eastern Massachusetts volcanics, all of which are known to have been quarried prehistorically. These are the Mattapan Volcanics of the Westwood-Dover area (Carty n.d.), the Mattapan Volcanics from Mattapan, Massachusetts, on the Neponset River Bowman, et al. n.d.), and the Lynn Volcanics which outcrop on the northern rim of the Boston Basin.

Of perhaps greater significance are seven cache specimens that appear to be made of lithic materials exotic to eastern Massachusetts which may have derived from sources as far distant as central Maine, the middle Hudson River valley of New York, and the Delaware River valley of New Jersey and Pennsylvania. This situation is not unique to the Satucket cache. During the course of a museums inventory of Massachusetts prehistoric collections for the Massachusetts Historical Commission, I was able to examine the material from the Mansion Inn and Watertown Arsenal sites. The same kinds of exotic lithic materials (probably Hudson River cherts, Kineo felsites, and Lockatong argillites) are also present in the assemblages from both of those sites, as are other local and exotic materials not represented in the Satucket cache (also see Dincauze 1968:61,73,76, 93-95).

It is becoming increasingly evident that if the people of the Watertown phase of the Susquehanna tradition in southern New England

> "...did not actually range as far as Maine and the Hudson Valley, at least they were in contact with people who could provide raw materials from these distant sources." (Dincauze 1968:76.)

The similarity of material culture and of mortuary or ceremonial deposits and the use of certain stones for chipped stone tools characterizes several manifestations of similar complexes of the Susquehanna tradition for this time period throughout the Northeast. The following models may possibly account for this repeatedly observed 'Susquehanna phenomenon':

1. A high mobility of Susquehanna tradition groups or bands throughout the Northeast at this time period.
2. High mobility of only certain individuals within those bands throughout the Northeast: leaders, traders, warriors, shamans, knappers?
3. Communication/trade/gift exchange, resulting from economic, ideological, or intermarriage-related factors between related bands throughout the Northeast.

Whatever the actual explanation(s), the postulated ideas and behavorial dynamics are very different from what is presently known about the indigenous Late Archaic small point tradition. A very different tool kit, reflecting differing adaptive strategies and lifestyles and made of distinctly local lithics such as quartz glacial cobbles, characterizes the native complexes of the small stemmed point tradition in southern New England.

The very nature of the introduction of the Susquehanna tradition into southern New England is of great interest and some controversy. Many researchers envision an actual movement of people into this region from a more southerly source. Typical artifacts are common throughout the area and as far north as coastal Maine. The dynamics of interaction

between the Susquehanna tradition peoples and the native peoples of the small stemmed point tradition are not clear at this time. As Dincauze has stated,

> "Coexistence with minimal mutual interaction appears to have characterized their joint habitation of the eastern Massachusetts area." (Dincauze 1974:49.)

This issue is of considerable interest and importance, and one can only hope new data will be collected and further studies undertaken to clarify the present state of knowledge.

As mentioned previously, the similarity between the Satucket cache notched points in form and flaking technique, as contrasted with the diversity in lithic materials, is striking and merits further comment. It is intriguing to speculate that they could be the work of a single knapper.

Again, this situation has parallels at Mansion Inn, loci 10 and 18.

Locus 10. "Twenty Watertown stemmed blades of at least ten different altered felsites. The similarity of these blades, in size, shape, and workmanship, is remarkable.

"One can only wonder at the care and skill expended in assembling twenty blades so well matched. The variety of raw materials adds another dimension to the cost of such an effort, quite aside from the craftmanship." (Dincauze 1968:57,58.)

Locus 18. "The great variety of raw materials represented in this assemblage is unusual. The Kineo-like porphyries, Coxsackie flints, basalt, and white chalcedony were obtained from distant, widely separated sources. No criteria of style, technique, or condition are restricted to one stone type; some Boats, large-stemmed and Mansion Inn Blades are made of the same blue-green porphyritic felsite. All the blades are enough alike to have been produced by one craftsman." (Dincauze 1968:61.)

It will be difficult to demonstrate that the Satucket cache and the 'matched blade sets' just described from Mansion Inn are the work of a single knapper. However, some optimistic researchers maintain that this may be statistically possible in the future (Callahan 1979:170).

To my mind, there are *at least four* possible models to account for the production of 'matched blade sets' and caches like the Satucket cache:

1. They represent finished tools knapped by several different individuals in the regions where the lithic material of their construction is indigenous, and were acquired through exchange by local individuals.
2. They represent the end product of biface preforms which were acquired through exchange by local individuals, and knapped into finished forms by several local knappers.
3. They represent the end product of biface preforms which were acquired through exchange by a single local individual, and knapped into finished form by only that individual.
4. They represent 'souvenir pieces' that were knapped by a single individual who had visited, in his lifetime, the regions where their raw materials are indigenous.

The presence of the postulated 'transport wear' on all of the Buzarewicz cache specimens suggests to me that they are a discrete unit which were carried around in a tied bundle or pouch for some time and/or distance. The nature of their occurrence, and the strong congruence of style and flaking technique, may indicate that they were the possessions and work of a single individual. Exotic lithic materials from diverse sources are clearly present in this and similar assemblages. Hypotheses have been generated to explain how an individual(s) may have acquired such a diversity of materials.

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I would like to extend my sincere thanks and appreciation to the following individuals for their assistance offered in various ways toward the completion of this report:

Mr. Stanley Buzarewicz of Whitman, Massachusetts, for sharing his discovery and for the general encouragement offered over the years in many endeavors; and William F. Bowman of the Eastern Massachusetts Archaeological and Geological Research Group of Weymouth, Massachusetts, for the photograph, for his helpful and informative discussions concerning lithic materials, and for other kindnesses.

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THE BACK PORCH SITE: M39-SE 50

Arthur C. Staples

This site, primarily Archaic in age, is located on the east side of Somerset Avenue, Segreganset (Dighton) directly behind my home at 1455 Somerset Avenue. The site covers an area approximately 290 feet (88 m) north and south by 300 feet (91 m) east and west. Most of the site is owned by Mr. Robert Bradshaw. The south half of the west end is a strip about 40 feet (12 m) wide and is my garden. I owned, and now my granson owns, the

area to the south of the site. The site extends about 25 feet (7 m) into this land.

The Back Porch Site is situated on a rise above swamps to the south and east. The east edge of the site drops sharply about 15 feet (5 m) as a steep bluff to a swamp. The swamp extends all the way to the Taunton River, about 750 feet (229 m) to the east of the site, except for a narrow band of salt marsh at the edge of the river.

The south side of the site is also a steep slope to the swamp level, but the topography is more complex, and the slope is only about half as steep as that on the east side. Starting at the east end of the south border of the site,the slope is to the southeast for 60 feet (18 m). Then the slope is to the west for about 125 feet (38 m), to the east for about 50 feet (15 m), and then southwest for 65 feet (20 m) to a valley that drains to the swamp.

Southwest of the site, about on a line with the west edge of the site, is another steep bluff down to the swamp, which runs about 1,000 feet (305 m) further south to the Segreganset River.

The west edge of the site is nearly level for about 100 feet (30 m), and then slopes to the south and west. On the west half of the site, about 50 feet (15 m) east of the west boundary, lies a ridge running north and south, ending in a broad knoll at the south boundary edge of the site. From this knoll the land slopes east, west, and south.

The north edge of the site is nearly level, with a slight pitch to the west. North of this boundary, the land is quite level and is owned by Mr. Bradshaw.

Water seeps out of the ground all around the foot of the bluffs extending from the south and east sides of the site. About 50 feet (15 m) south of the southwest corner of the site a very small stream starts, which runs all year round. Water is readily available almost anywhere at the junction of the slope and swamp, simply by digging a small hole.

The subsoil throughout the area is a very fine sand. The area had been rented to market farmers and planted every year until 1978, when the site was largely destroyed.

Although I lived almost eight years on the site before I found my first artifact, the area was well known as a site to many others. Mabel Robbins found an old French coin while walking the site with Dr. Maurice Robbins years ago. The late Mr. John Richardson of Attleboro walked the site after almost every rain.

In 1946, before I knew there was a site on the property, I built a 16-foot-square (5 m) screened-in building with fireplace on what is now the southeast corner of the site. This is called the Back Porch, which accounts for the name I have given the site. At the foot of the hill south of the Back Porch, where the slope and swamp join, I dug a small well 2 feet deep and 2 feet (.6 m) square. I wonder now what I destroyed when I dug the well and leveled for the foundation and concrete floor of the porch.

At this time I had never heard of the Massachusetts Archaeological Society or found a single artifact, although my father had a few he'd found on our farm. I had always looked, but in vain. Then one day, while crossing the field behind my house with a wheelbarrow of tools, there in front of me lay a beautiful white quartz point. Since that time my son and I have found over 500 artifacts here, mostly stemmed points. Accompanying this article are drawings of a few of the artifacts which I have found here (Figures 3 and 4). More than 50% of these artifacts are made of white quartz. There are very few small triangles, one two-knob gouge, one notched whale-tail bannerstone of gray shale, knives, sandstone mullers, scrapers, soapstone potsherds, sharpening stones, hematite, graphite, and one grit-tempered ceramic sherd, 15 by 18 mm in size. Fire cracked rock was scattered over the site.

One of the last times the site was plowed I believe they used a larger plow. Subsoil and charcoal were brought up, which I hadn't seen before. The first time I walked the field after this plowing, I picked up 14 artifacts. I don't think I ever picked up that many artifacts at once before or since. I found one-half of the whale-tailed bannerstone in my garden; several years later I dug around a large rock, which the tractor couldn't get near, and found the other half, about 20 feet (6 m) from where I found the first piece.

After learning it was a site, I kept a close eye on any construction in the area. In August, 1976, the foundation of my grandson's home was built. Before building started I laid out the area in twenty 2-meter squares. From this foundation area I excavated a total of 25 artifacts, including a large sherd from a soapstone bowl. From a disturbed area around the foundation on the north and west sides, 6 more artifacts were recovered. Artifact materials included quartz, quartzite, shale, felsite, sandstone, graphite, one

fragment of flint, and the soapstone potsherd.

One feature was found, and this was a pit or hearth about 60 cm in diameter in square A0. The soil was dusty and without moisture, and it was impossible to see outlines. There was just enough pulverized charcoal under a spot of red soil to give the dust a dark gray color. The feature contained a pailful of burned stone and three artifacts, including one hammerstone muller, a small chopper, and a large chopper.

Most of the Back Porch Site is now destroyed. Several years ago, first a 12-inch (.3 m) and then a few years ago a 20-inch (.5 m) high pressure natural gas main were installed. After the trench diggers and heavy equipment finished, there was not much left of the northern third of the site. I did keep close watch on the trenches when the gas mains were installed and never saw signs of a subsoil pit or disturbance, with one possible exception. I was unable to examine this spot closely, so never could be sure just what I was looking at other than a questionable profile in the side of a deep trench.

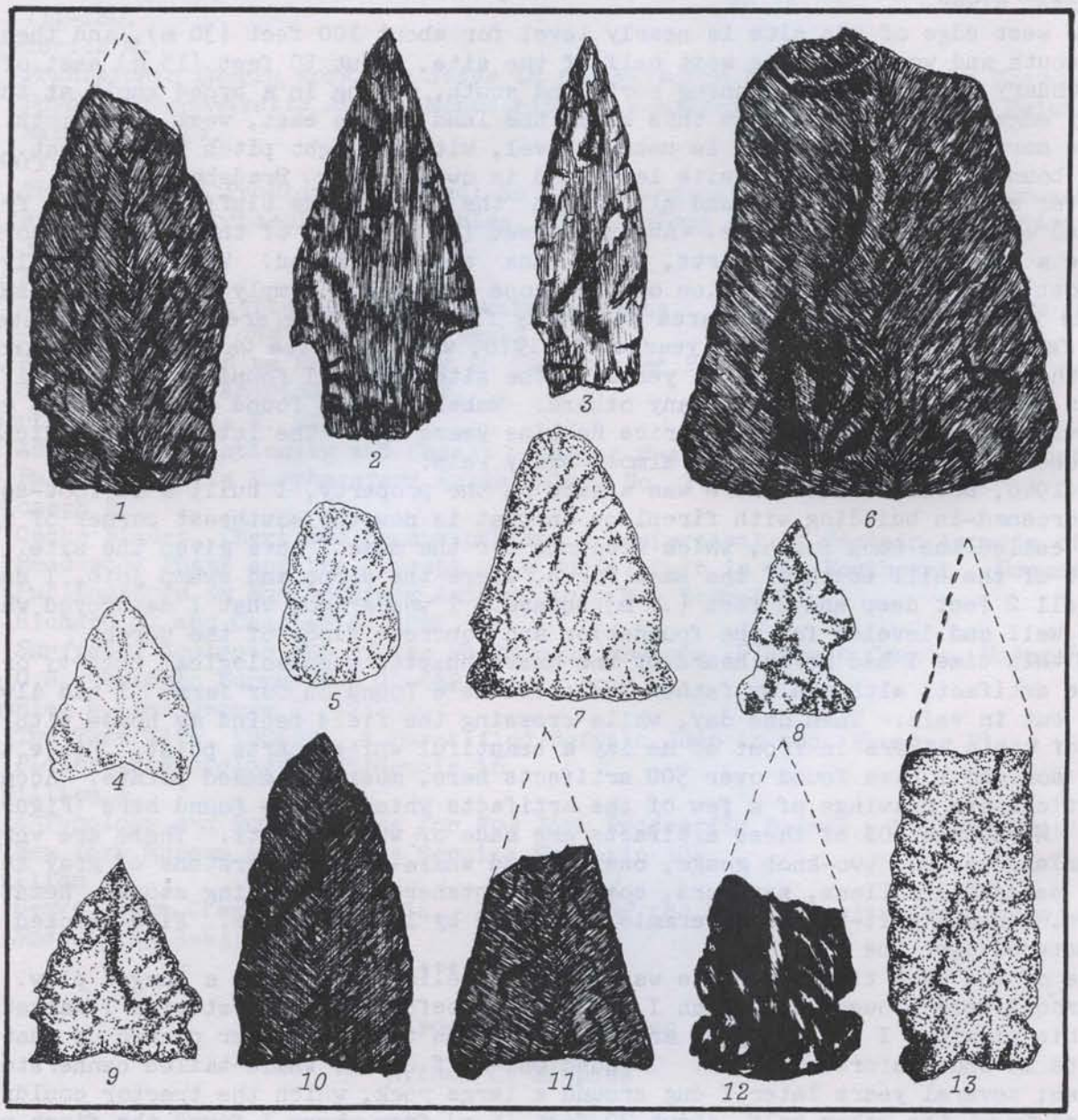

Figure 3. Back Porch Site Lithic Artifacts: 1, felsite stemmed knife; 2, dark red shale corner removed point #5; 3, green shale taper stemmed point; 4, small white quartz triangle #5; 5, white quartz stemmed scraper; 6, red felsite ax blade, top broken; 7, tan quartzite eared point #1; 8, gray shale (?) side notched #5 point; 9, gray felsite eared #2 point; 10, reddish felsite triangle #6; 11, brown felsite triangle #6; 12, black flint side notched #7 point; 13, brownish gray felsite side notched #5 point.

In 1978, more than one-half of the remaining area was completely destroyed. Again, there was excavating to the depth of about 3 feet (1 m) and the loam and sand were carted away. Today there is a warehouse 100 feet (30.5 m) long on the east side of the site. The excavated area is blacktopped, as is a road from the highway to the warehouse.

There are many other sites in the vicinity of this site. Sweet's Knoll, M39-71, lies about 1000 feet (305 m) northeast of the Back Porch Site (Robbins and Staples 1955). This site also has been completely destroyed, as the soil was sold for fill. About 1000 feet (305 m) to the south of the Back Porch Site is the Segreganset River Site, M39-102 (Staples 1981) on the north bank of the Segreganset River. South of this is the Boats Site, M39-52 (Rose 1953, 1965). Across the Taunton River from the Boats Site is the Grassy Island Site, M39-7 (Johnson and Raup 1947). Bear Swamp 1, M39-72, and Bear Swamp 2, M39-81, lie 2000 feet (610 m) directly east of the Back Porch Site on the east side of the Taunton River. I'm sure there are still other sites on the east side of the Taunton River between Grassy Island and Bear Swamp, since it is a great area for surface hunters.

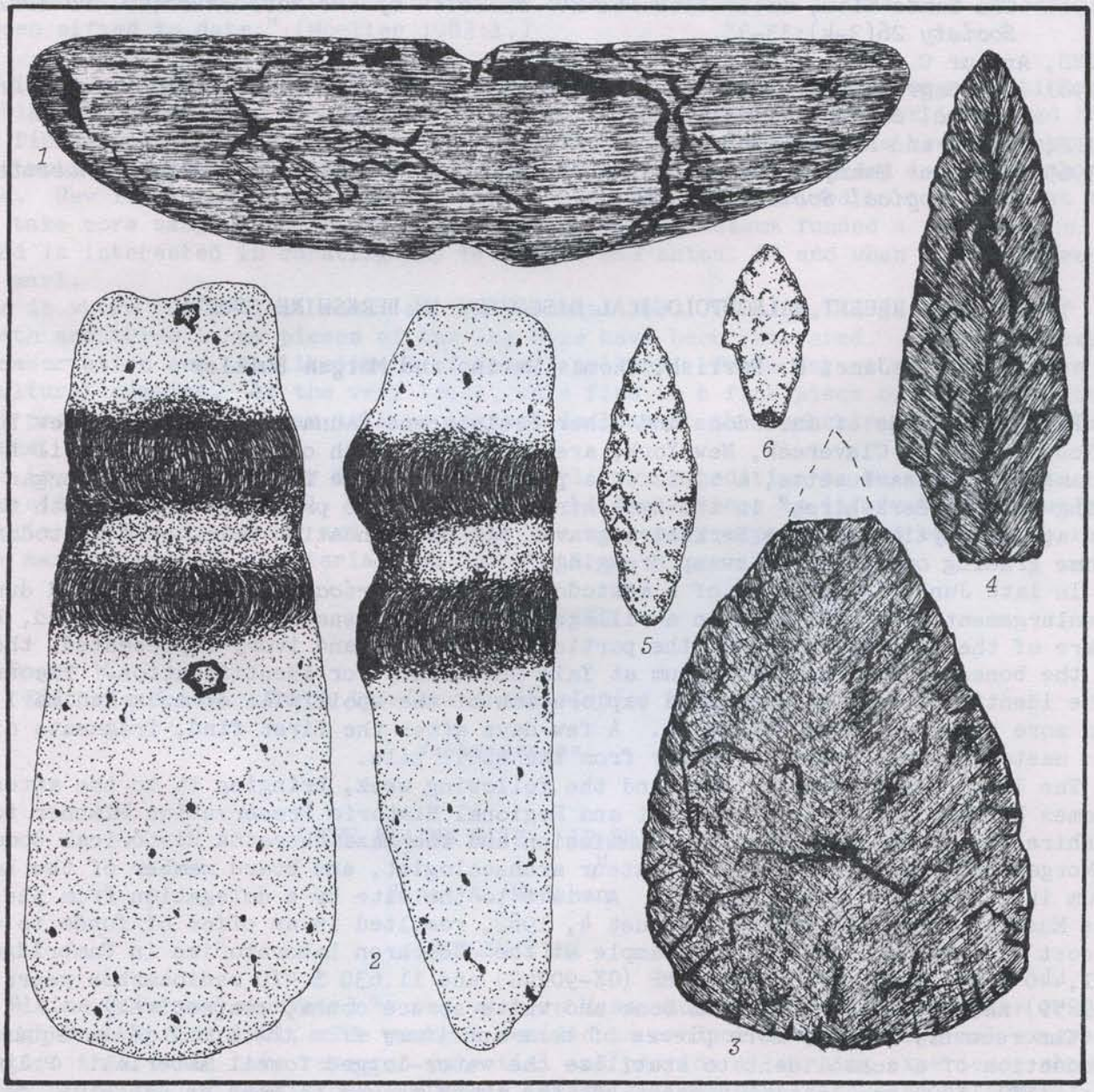

Figure 4. Back Porch Site Lithic Artifacts: 1, green shale whale-tailed bannerstone; 2, sandstone (?) 2-knobbed gouge, polished surface eaten away by soil acids; 3 and 4, gray felsite knives; 5 and 6, white quartz small stemmed points.

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RECENT PALEONTOLOGICAL DISCOVERY IN BERKSHIRE COUNTY

James N. Parrish, Thomas Marino and Morgan Bulkley

Extensive finds of mastodons and other Pleistocene fauna in neighboring New York State, as close as nearby Claverack, New York, are contrasted with only a single fossil find from Williamstown, Massachusetts, a tibia of a prehistoric horse found in 1948. Morgan Bulkley writing in "Our Berkshires" in the *Berkshire Eagle* in 1966 predicted: "A mammoth tooth could appear anytime in some Berkshire gravel pit or foundation hole, or a mastodon tusk at some grading operation or swamp dredging."

In late June, 1982, bones of a mastodon *(Mammut americanus)* were unearthed during the enlargement of a farm pond in a village in western Massachusetts. Intrigued, but yet unaware of the species of animal the portions of humerus and ivory represented, the owner took the bones to the Peabody Museum at Yale University for identification. Encouraged by the identification, he continued exploration of the spoil pile of muck and marl and found more ivory and bone fragments. A few days after the first find, fragments of several mastodon teeth began to appear from the spoil pile.

The local press reported the find the following week, bringing it to the attention of James N. Parrish, an archaeologist and Regional Historic Preservation Planner for the Berkshire County Regional Planning Commission and the Massachusetts Historical Commission, and Morgan Bulkley, a naturalist, amateur archaeologist, and board member of the Berkshire Museum in Pittsfield, Massachusetts. A visit to the site by a delegation from the Berkshire Museum curatorial staff on August 4, 1982, resulted in an offer of funds to defray the cost of running a radiocarbon sample at the Geochron Laboratories in Cambridge. Dates of 11,440 ± 655 radiocarbon years BP (GX-9024G) and 11,630 ± 470 radiocarbon years BP (GX-9259) have been obtained from bone and white spruce cones, respectively.

The recovery of many more pieces of bone and ivory from the spoil pile required the introduction of a consolident to stabilize the water-logged fossil material. Polyethylene Glycol (PEG 1500) was initially used, but the ivory proved to need an adhesive, so Polyvinyl acetate (PVA), and Carnauba wax were tried and were found to prevent further checking successfully. Future treatment of the entire collection will be required and it is at present in controlled storage awaiting treatment.

Environmentally, the site itself is an archaeologist's dream. A kettle hole is located at the southwestern end of a broad alluvial plain bounded on the south by a large marsh and swamp. The kettle hole itself is at the apex of two slightly converging rock ridges. One can readily imagine a group of paleohunters driving this mastodon from its browsing among the conifers on the plain to become mired in the bog in this natural culde-sac. White spruce cones (*Picea glauca*) have been found in considerable numbers in the examination of the spoil pile, and a water plant (*Najas flexilis*) has been identified.

Unfortunately, no direct evidence of the hand of man has yet been found. However, a large bone plate, part of a femur, was recovered and found to bear about a dozen parallel marks that are conjectured to be butchering marks. In addition, Roger W. Moeller of the American Indian Archaeological Institute reports that two stones which could have been used in butchering the animal were found in the spoil pile.

> "The absence of a convincing association is unfortunate, but the possibility of their use is bolstered by the total absence of any other stone in the muck which has been sifted to date." (Moeller 1983:i.)

The location and material are intriguing enough to interest several organizations in assisting the owner with the evaluation of the site. Roger Moeller has inspected the site and finds, and has taken floral samples by flotation. The site has been brought to the attention of the Massachusetts Historical Commission and recorded in the state site file. New York State Archaeologist Robert Funk has been enticed to come look at the site and take core samples for palynology. The Berkshire Museum funded a radiocarbon sample and is interested in curating any or all of the animal if and when it is recovered from the marl.

This is where the project rests at the present time. To date, large segments of tusk, teeth and three large pieces of the leg bone have been recovered. There is proven floral preservation and the likelihood of fossil pollens. There may or may not be associated cultural remains. At the very least, this find is a fine piece of natural history which, if properly handled, can tell us a great deal about the Berkshires during the late Pleistocene.

Here is a fine opportunity for a multidisciplinary expedition to be assembled to study the site and its material. It is the hope of the authors to inform the archaeological public of this discovery and to solicit the necessary expertise and backing to recover the maximum amount of material and information.

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THE BLAINE SITE: 19-FR-49

Jane A. McGahan

INTRODUCTION

The Blaine Site was excavated by the western Massachusetts Norwottuck Chapter from June through November of 1981. The members decided to conduct an archaeological excavation at a location that would have research potential and provide a learning experience about Connecticut River Valley prehistory. Surface investigations were conducted at several potential sites. The Blaine Site was chosen because it had both a physical and cultural background that predicted a prehistoric site. It also had the advantages of being easily accessible and having the cooperation and support of the owners of the site (the Blaine family).

The Blaine Site is located on the Deerfield River in the town of Deerfield, Franklin County, Massachusetts. The excavation of this site was timely. A Phase I Archaeological Survey was being conducted at the same time in the Deerfield River Gorge by the University of Massachusetts/Amherst. Collections made from the Blaine Site are presently housed at the University of Massachusetts Department of Anthropology along with collections from the Deerfield Survey.

PHYSIOGRAPHY

The Blaine Site is located on the Shelburne Falls sheet of the United States Geological Survey quadrangle. The main feature of this quadrangle is the Deerfield River which cuts a deep gorge from the northwest corner to the southeastern edge of the quadrangle (Figure 5). Most of this area is part of the Berkshire Hills, which are part of the New England Uplands. The eastern edge of the quadrangle is part of the Connecticut Lowlands. The fact that the site is located in an ecotone area, with different flora and fauna accessible in each distinct environment, would have given aboriginal groups more options in terms of subsistence resources. In addition, the site is located in a riverine environment, which offers the availability of fish, a source of drinking water and a medium of transportation. Springs for drinking water also flow out of the bottom of the deltaic deposits directly behind the site to the southwest. The Blaine Site is located in this ecotonal setting on the south side of the Deerfield River, about 200 meters south of the Stillwater Bridge.

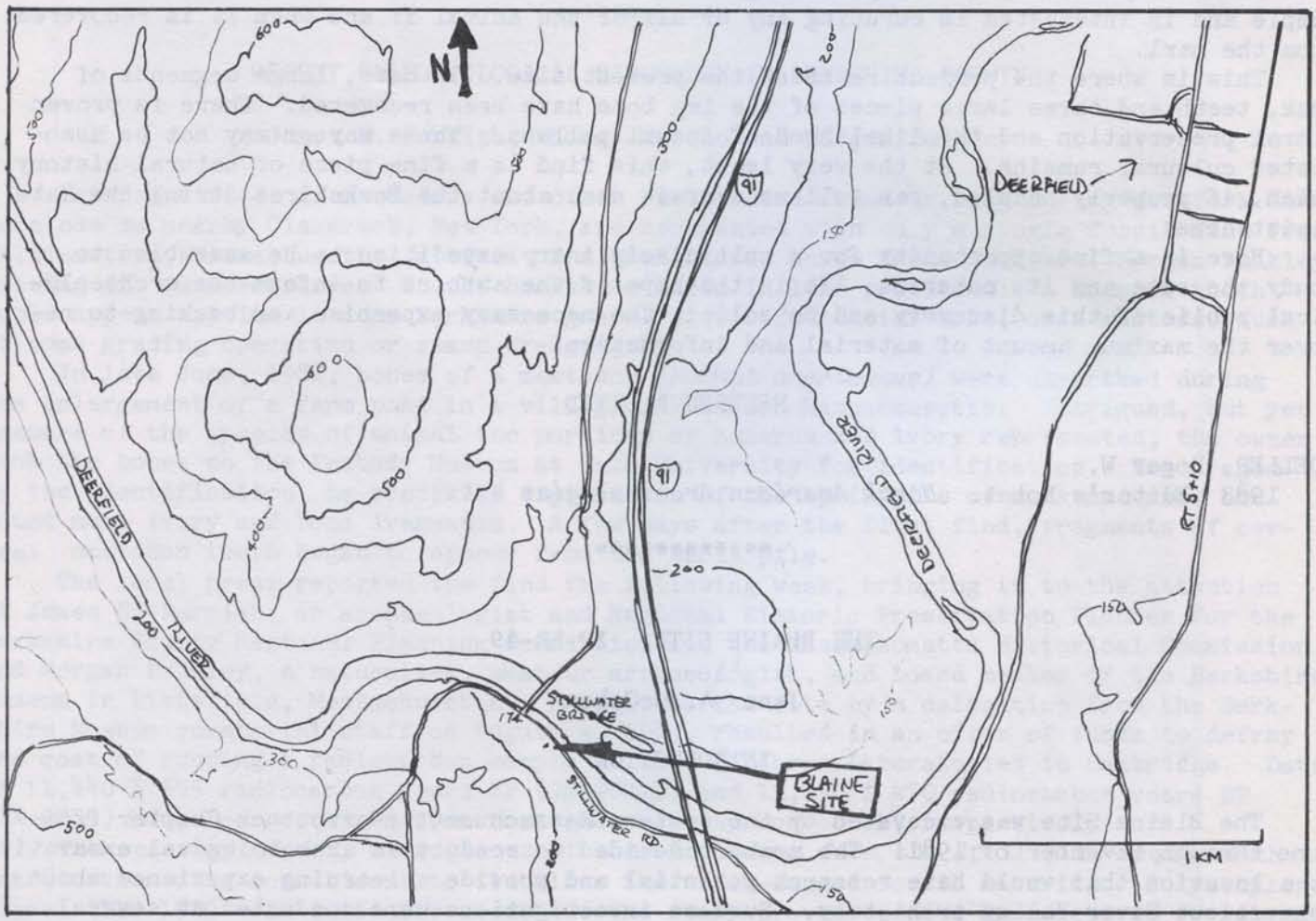

Figure 5. Location of the Blaine Site on Shelburne and Greenfield USGS Topographic Quadrangle Maps, Scale 1:25,000.

GEOLOGY AND GEOMORPHOLOGY

The bedrock underlying the site area is chiefly soft sandstone of Triassic age which has eroded to form the Connecticut Lowland. To the west of the site is harder bedrock of the New England Uplands through which the Deerfield River has cut a gorge (Segarstrom 1959). The surficial geology of the area results chiefly from glacial activity and the subsequent formation and drainage of Glacial Lake Hitchcock some 13,000 years ago. Ground moraine (till) was brought in by the glaciers and deposited over the bedrock. Later deposits by the meltwaters of the glacier left various features such as kame terraces and eskers in the uplands. Other features included temporary lakes which would result from terminal and recessional moraines forming temporary dams as the glacier retreated. One of these temporary lakes was Glacial Lake Hitchcock which, at its largest size, covered the Connecticut River Valley from Rocky Hill, Connecticut, to as far north as Lyme, New Hampshire. The water also backed up into the Deerfield River gorge, which deposited sediments from upstream in a delta at the end of the gorge (near the Stillwater Bridge) and filled the gorge with sand and gravel.

The top of the remnant delta today represents the river level at the time that it flowed into the lake. After the lake drained, the Deerfield River began to cut through the deltaic and lacustrine deposits. Throughout this period of down-cutting action the river left terraces within the gorge, the highest in elevation being the oldest in time. The river flowed out of the gorge, depositing large areas of alluvial soil in the floodplains of the Connecticut Lowlands. The Blaine Site is located on the second of a series of four terraces in this area, which is critical to the dating of artifacts found at the site.

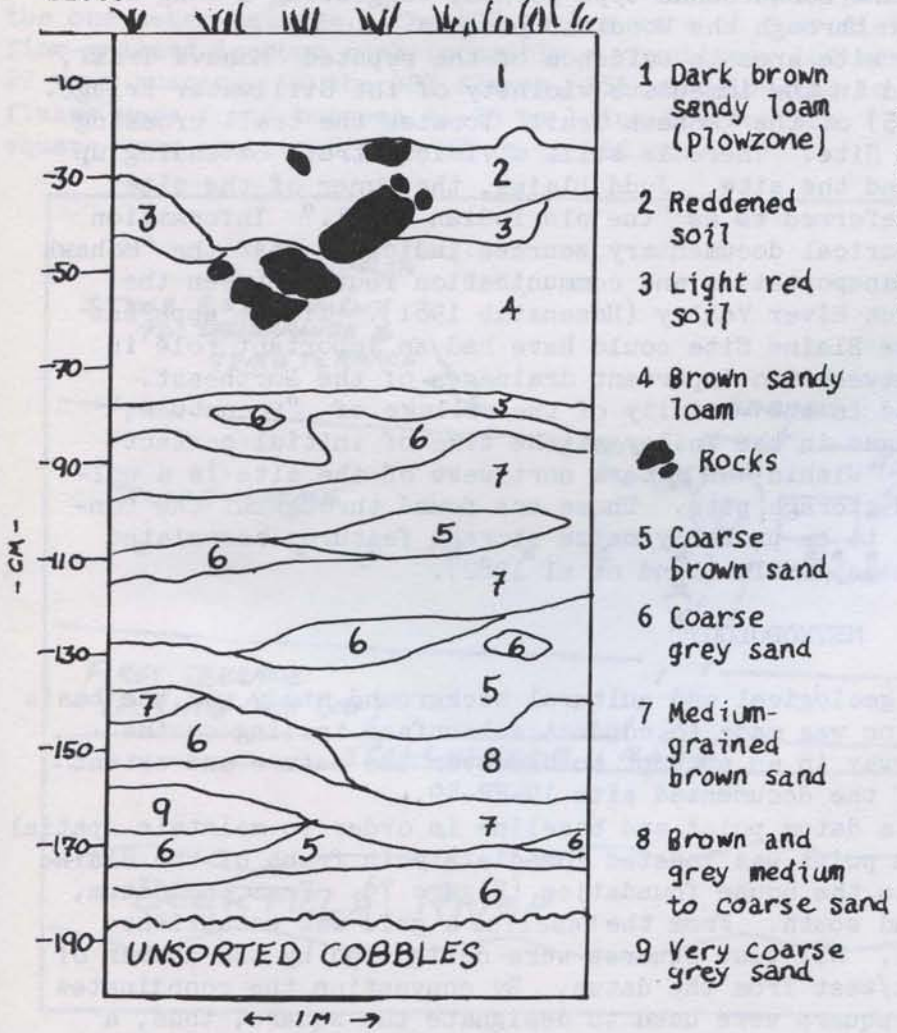

Figure 6. Generalized Profile of Test Square S35 E10, West Wall.

SOIL

Because of the complex geological history of the site area, the soil stratigraphy is similarly complex. The soil in the site area consists of well-drained fine sandy loam of the Agawam and Merrimac series (United States Department of Agriculture, 1967). The two series are described as follows:

> "The Agawam series consists of well-drained fine sandy loams that formed in deep deposits of water-sorted sand. These soils are on terraces bordering the flood plains of major streams. Most areas are nearly level or gently sloping, but some are moderately sloping to moderately steep. Areas between terrace levels are on short, steep slopes, or escarpments.
>
> "The Merrimac series consists of well-drained, slightly droughty fine sand loams or sand loams that formed in deep deposits of stratified sand and gravel. The sand and gravel were derived mainly from granite, gneiss and quartzite. These soils are on nearly level to steep kames, eskers and glacial outwash terraces."

From excavations on the site, the test pit profiles attest to the complexity of the soil stratigraphy (Figure 6).

CULTURAL BACKGROUND

Archaeological evidence of habitation in New England dates back to the last glacial age, 12,500 years ago. Any earlier evidence of occupation would have been destroyed by glacial action. The Connecticut River Valley has a rich archaeological history, beginning with the drainage of Glacial Lake Hitchcock during Paleo-Indian times (Curran and Dincauze 1976). Although there is a large inventory of known sites (Mulholland and Wobst 1980), there has been little formal excavation or documentation. We know that Paleo-Indian sites are located nearby in South Deerfield and Gill, Massachusetts. Other sites representing the Middle Archaic, Late Archaic and Woodland traditions are found throughout the Connecticut River Valley.

There are a large number of inventoried sites in the Deerfield River area at the point where it flows out of the gorge into the lowland flood plains. Two sites that William S. Fowler located, 19-FR-48 and 19-FR-49, are in the immediate vicinity of the Blaine Site (Mulholland and Wobst 1980). Three different forms of the Massachusetts Historical Commission Prehistoric Archaeological Site Inventory list information on these two sites. One describes six burials and a cache of projectile points which were encountered during construction of the driveway at the Blaine residence (the burials were later re-interred). Another describes points, lithic flakes and ceramic sherds collected from the cultivated fields on the Blaine property, and the third report describes a steatite fragment also found in that area. The last two are in the collections of Francis Billings, the previous owner of the Blaine property. Among the inventoried artifacts, Levanna, Meadowood, Snook Kill, Rossville and Lamoka types of points have been found. The cache of points found with the burials contained Meadowood and Susquehanna type points, suggesting a long sequence of occupation from Late Archaic through the Woodland periods.

Another important feature of the site area is evidence of the reputed "Mohawk Trail," which apparently crossed the Deerfield in the immediate vicinity of the Stillwater Bridge. A detailed map by David Costello (1975) of the "Mohawk Trail" locates the trail crossing the river directly through the Blaine Site. There is still a visible trail extending up the side of the delta escarpment behind the site. Judd Blaine, the owner of the site, explained that this has always been referred to as "the old Indian Trail." Information gathered from archaeological and historical documentary sources indicates that the "Mohawk Trail" was probably a major trade, transportation and communication route between the Hudson River Valley and the Connecticut River Valley (Hasenstab 1981). If the apparent location of this trail is correct, the Blaine Site could have had an important role in aboriginal trade and communication between two important drainages of the Northeast.

The Blaine Site was also situated in the vicinity of the village of "Pocumtuck," one of several major aboriginal villages in the Valley at the time of initial contact with European culture (Sheldon 1897). Within 400 meters northwest of the site is a collection of ten aboriginal underground storage pits. These are found throughout the Connecticut River Valley and are thought to be probably maize storage features associated with the Woodland culture in the Northeast (Mulholland et al 1982).

METHODOLOGY

Information gathered during the geological and cultural background study was the basis of our field research plan. A decision was made to conduct subsurface testing on the terrace of the Blaine house and driveway in an attempt to discover the nature and extent (both horizontally and vertically) of the documented site 19-FR-49.

The first step was to establish a datum point and baseline in order to maintain spatial control of the field test. The datum point was located immediately in front of the Blaine house front door and triangulated into the house foundation (Figure 7). From the datum, a baseline was projected due north and south. From the baseline a grid was established consisting of one-meter-square units. All test squares were designated by the number of meters they were north/south and east/west from the datum. By convention the coordinates of the northeast corner of each test square were used to designate the square, thus, a square designated S100 W20 would represent a square with its northeast corner 100 meters south and 20 meters west of the datum.

Shovel test pits (40X40 cm) were excavated at 20-meter intervals along the length of the baseline starting at S35E0, just south of the driveway. In addition, test pits were also excavated north of the driveway in the front yard. At the same time an auger was used to test geological changes in a short series of transects along a line running due west from S100E0 (Figure 7).

After completion of these 40X40 cm tests pits and the auger testing, it was concluded that the major concentration of occupation on this terrace was located in the area surrounding the Blaine driveway. To further investigate the nature of the occupation it was decided to excavate one-meter-square test units to the south of the driveway at S35, east and west of the baseline at 10-meter intervals. Three one-meter units were opened: S35E10, S35E20 and S35W20 (S35W10 was skipped as it was located under a compost heap).

The process of excavating the one-meter units consisted of soil removal by shovel skimming followed by troweling when artifacts were encountered. Depth of soil removal was controlled by 10 cm intervals. Troweling was undertaken in quadrants of the one-meter unit. All material removed was passed through 1/8 inch mesh screens to recover artifacts. Artifacts were recorded on ARDVARC computerized forms (Mulholland 1980).

RESULTS

The most significant finds of the Blaine Site excavations include one quartzite projectile point, a fire hearth feature, over 400 flakes of four different raw materials, 11 prehistoric ceramic sherds and several pieces of fire-cracked rock. A large number of charcoal fragments were recovered from the various test pits at several levels.

Lithic materials were concentrated in the test pits south of the datum point and in the one-meter squares. The 407 flakes were of four distinct materials: 176 were of a fine-grained igneous rock (possibly a rhyolite), 160 were chert, 49 were quatzite, and 22 were quartz. Of the 407 flakes, 355 were located in the one-meter unit S35E10. 131 flakes were found between 31-33 cm below the surface. The rest of the flakes in the square were scattered from 37 cm to 125 cm.

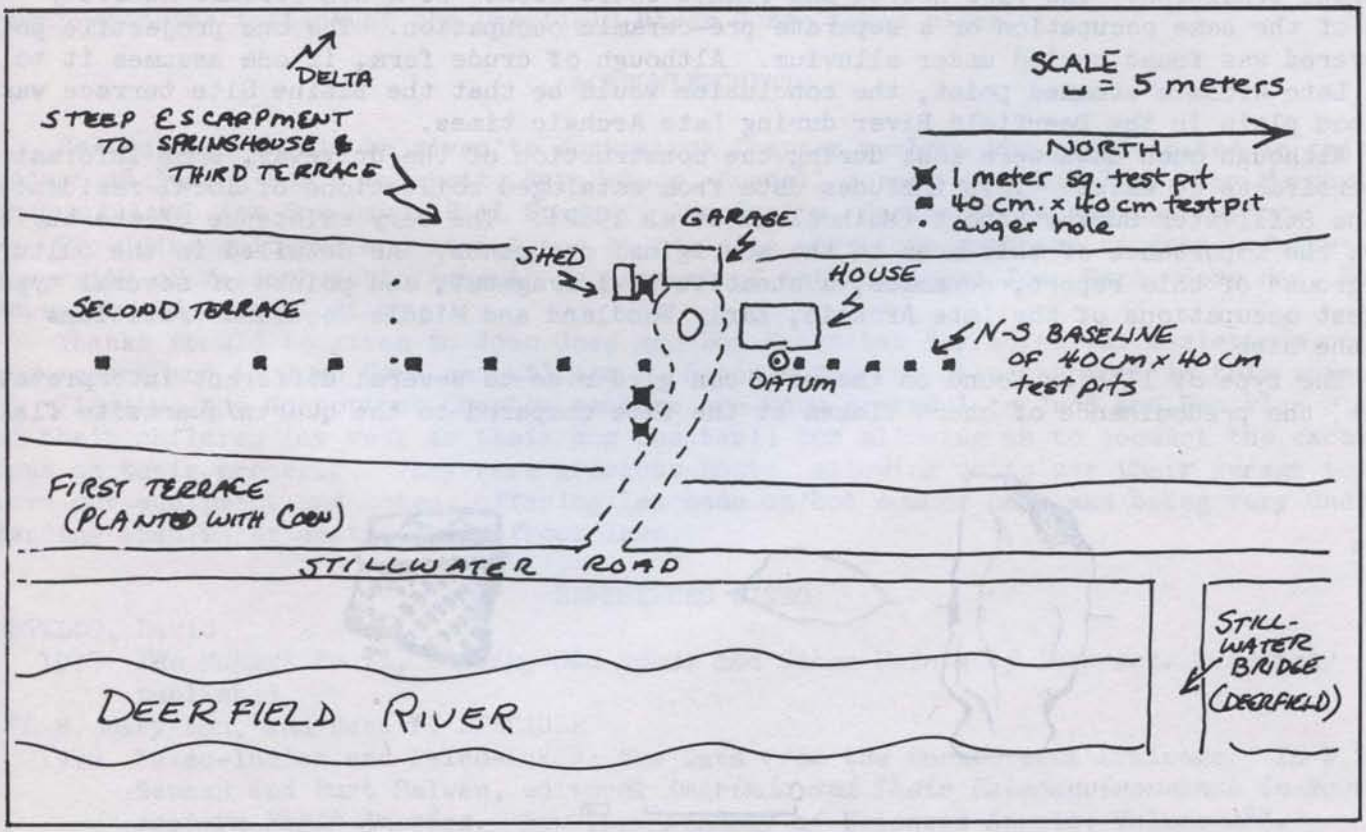

Figure 7. Blaine Site, showing placement of test pits along base line.

Flakes were also inspected for evidence of use-wear along fresh edges but none could be detected. The recovered flakes were either too small to have been used, or in the case of the larger flakes, the raw materials were too coarse to reflect use patterns (Joan Gero, personal communication).

The one projectile point was found in test pit S55E0 at a depth of 82-92 cm. It is a quartzite stemmed point with a broken tip (Figure 8).

All of the ceramic sherds occurred in the test pits north of the datum point. These sherds were encountered from the plowzone down to 40 cm in depth. The 3 decorated ceramic sherds reveal dentate rocker-stamping associated with the Middle Woodland period (Figure 8). Eight undecorated sherds were also recovered.

The fire hearth was found in S35E10, in the west half of the unit (half of it remains in S35E9). It contained the characteristic reddened soil and fire-cracked rocks. The entire feature lies between 25 cm and 60 cm below the surface. Charcoal fragments were also found in association with the feature.

Examination of the exposed soil profiles, particularly in S35E10, confirmed the prediction of a complex soil stratigraphy from the background research (Figure 6). There seems to have been at least 80 cm to 180 cm of alluvium deposited on this terrace. Below 180 cm, coarse river gravel is evident.

An interesting feature in S35W20 caused some confusion at first. What appeared to be a variety of rolled metal beads turned out to be heavy iron concretions that formed around plant roots. These iron concretions were found throughout the site.

INTERPRETATION

From the materials excavated at the Blaine Site, it is difficult to pinpoint the exact periods when the occupations took place. From our results of test pits on the Blaine Site terrace, it appears that most of the site was located where the driveway now exists. So, apparently much of the data from that area is now lost. However, we do have other evidence to work with. The ceramics excavated from the north pits are diagnostic of the Woodland tradition. The fire hearth and flakes could either be a non-ceramic activity area of the same occupation or a separate pre-ceramic occupation. The one projectile point recovered was found buried under alluvium. Although of crude form, if one assumes it to be a Late Archaic stemmed point, the conclusion would be that the Blaine Site terrace was a flood plain in the Deerfield River during Late Archaic times.

Although much data were lost during the construction of the driveway, some information and artifacts do exist. This includes data from cataloged collections of local residents in the Stillwater Survey Report (Mulholland et al 1982). The very existence of the burials shows the importance of this area to the aboriginal occupants. As detailed in the cultural background of this report, ceramics, a steatite bowl fragment, and points of several types suggest occupations of the Late Archaic, Early Woodland and Middle Woodland traditions for the site.

The type of lithics found on the site can give rise to several different interpretations. First, the predominance of chert flakes at the site compared to the quartz/quartzite flakes

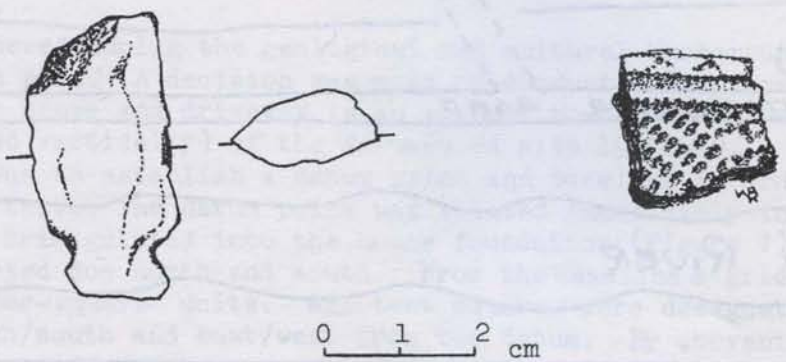

Figure 8. Artifacts recovered from Blaine Site: broken quartzite projectile point and dentate rocker-stamped rim sherd.

found in the uplands in the Stillwater Survey follows a general pattern throughout the Connecticut River Valley (Bob Hasenstab, personal communication). The chert is not a local lithic resource. It is found in the Hudson River Valley and may have been traded or transported over the "Mohawk Trail" to this area. Alternatively, Vermont chert sources may be represented here. The pattern of different lithic materials could result from several factors: 1. differing land use among differing cultures through time relying on different lithic resources; 2. local availability of chert being confined to major waterways; 3. seasonal fluctuations in the availability of chert through trade (correlating with seasonal land use); 4. sampling error resulting from one coincidental hearth (Bob Hasenstab, personal communication).

In comparison with many archaeological excavations, small numbers of artifacts were excavated at the Blaine Site. However, when combined with other available information of the area, i.e. the burials and the collections, and perhaps most important the Phase I Stillwater Survey, the Blaine Site fits in with the evidence of significant aboriginal occupation over a period of time in the Connecticut River Valley.

RECOMMENDATIONS

Although the Norwottuck Chapter has not continued to work at this site after the initial field season, it is certain that more prehistoric evidence exists at the site. Even though the construction of the driveway destroyed one major locus of prehistoric activity, many interesting questions remain:

1. Were other terraces occupied?
2. How is the Blaine Site associated with other known prehistoric features close by?
3. Do ceramic and flake scatters represent different occupations at the site or are they different activity areas of the same time period?

Further work is impractical to answer some of these questions at the present time because of the location of the house, garage and garden. The recommendation is to leave the site preserved in its present state until further disturbance is anticipated or until a comprehensive testing of the Deerfield River Gorge takes place.

ACKNOWLEDGMENTS

Recognition should be given to Norwottuck Chapter members who participated in this project including Doris Brackett, Ray Holmes, Russell Jones, Rick KcKelvey, Pam Murphy, Bob Remaillard Ann Sorenson, Bill Spencer, Ann Spring, Janice Weeks and the author.

Providing guidance and assistance at the site were four graduate students of the University of Massachusetts/Amherst Department of Anthropology: Joan Gero, Gene Ham, Bob Hasenstab and Steve Loring.

Thanks should be given to Joan Gero and Bob Hasenstab for editorial assistance on this report and to Joan Gero and William B. Ritchie for the illustrations in this report.

Finally, the Norwottuck Chapter members are very grateful to Judd and Beatrice Blaine and their children (as well as their dog Chester!) for allowing us to conduct the excavations on their property. They were gracious hosts, allowing us to use their garage to store our equipment and notes, offering lemonade on hot summer days and being very understanding when we excavated their front lawn.

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THE CONTRIBUTORS

MORGAN BULKLEY is an amateur archaeologist and a naturalist who has written for the *Berkshire Eagle* and is a member of the board of the Berkshire Museum.

FREDERICK M. CARTY has been a member of the M.A.S. for many years. He is a 1973 graduate of Beloit College in Wisconsin with a B.A. degree in Anthropology, and has worked for the Massachusetts Historical Commission.

HARVEY C. JORGENSEN lives in Carolina, Rhode Island, and is a member of the M.A.S. He attended the University of Massachusetts/Amherst and has participated in several excavations in southern New England.

ALEXANDER G. LAWN attended the University of Massachusetts/Amherst and has been a member of M.A.S. for several years. He lives in Haverhill, Massachusetts, and actively pursues his interest in New England's history and archaeology.

THOMAS MARINO is the discoverer of the Berkshire County mastodon, and owner of the land on which it was found.

JANE A. McGAHAN is an active member of the Norwottuck Chapter of the M.A.S.

JAMES N. PARRISH is an archaeologist who works as Regional Historic Preservation Planner for the Berkshire County Regional Planning Commission and the Massachusetts Historical Commission.

ARTHUR C. STAPLES has been a member of the Cohannet Chapter of the M.A.S. for many years, and has served as Treasurer of the M.A.S.

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AUTHORS of articles submitted to the M.A.S. Bulletin are requested to conform to the following regulations.

Manuscripts must be typed as originals with two carbons (or photocopies). Margins must be 1½ inches (38mm) on both sides. Corrasable paper should NOT be used. Originals and copies are to be sent to the Editor for evaluation and comment.

Typing is to be on one side of paper only with at least double spacing. Proper heading and bibliographic material must be included.

Manuscript headings should be prepared as follows:

THE PONKAPOAG SITE: M-35-7

Robert A. Martin

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GOOKIN, D.
1970 Historical Collections of the Indians of New England (1674) Jeffrey H. Fiske, annotator. Towtaid. Worcester.

They should be listed alphabetically by author; several references by the same author should be listed chronologically by year.

Intratextual reference citations are to include the author's name, date of publication, and the page, plate, or figure number, all enclosed in parentheses. as follows:

(Bowman & Zeoli 1973:27) or (Ritchie 1965: Fig 12)

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THE EDITOR is receptive to archaeologically serious contributions of any reasonable length. Long pieces can usually be condensed effectively if they exceed the limits of our publication. The Editor welcomes short pieces and encourages contributors to write them.

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